CENTRE NATIONAL D'ETUDES SPATIALES

CNES Update

Jean-Yves PRADO

3rd ILWS meeting, Vienna, April 24, 2005

Roadmap process and priorities

- Every 5 years (+/- 1year), CNES holds a 'prospective seminar' for science programmatics

- Call for ideas released in 2001 and updated in 2004 to include formation flying missions

- Priorities
  - mandatory ESA science programme (=> BepiColombo, Solar Orbiter)
  - national programme (microsat MYRIADE, formation flying)
  - missions of opportunity

- Prospective workshop held in july'04 in Paris

- Scientific Advisory Committee in sept/oct 04
  - PICARD go ahead THANKS TO ILWS !!
  - TARANIS for phase A (in competition with an astronomy mission)
  - LYOT / MIRAGES microsat projects for phase 0
  - ASPICS as Formation Flying Mission (in competition with 3 from Astronomy Group)

- Next selection round planned for 2nd semester 2006

PICARD

- Solar Physics:
  - heliosismology,
  - absolute measure of the solar diameter (mas)
- Climatology:
  - relation solar diameter/TSI,
  - reconstruction of solar activity from Maunder minimum
- Atmospheric science
  - monitoring of some UV bands (ozone)
- Space weather (UV, Vis, CaII)

- Three instruments:

PREMOS, 3 UV photometers and a radiometer (PMOD Switzerland)

SODISM, a telescope and CCD to measure the solar diameter (Service d'Aéronomie - France)

SOVAP, a radiometer (IRMB - Belgium)

- Operations in the same time frame as SDO

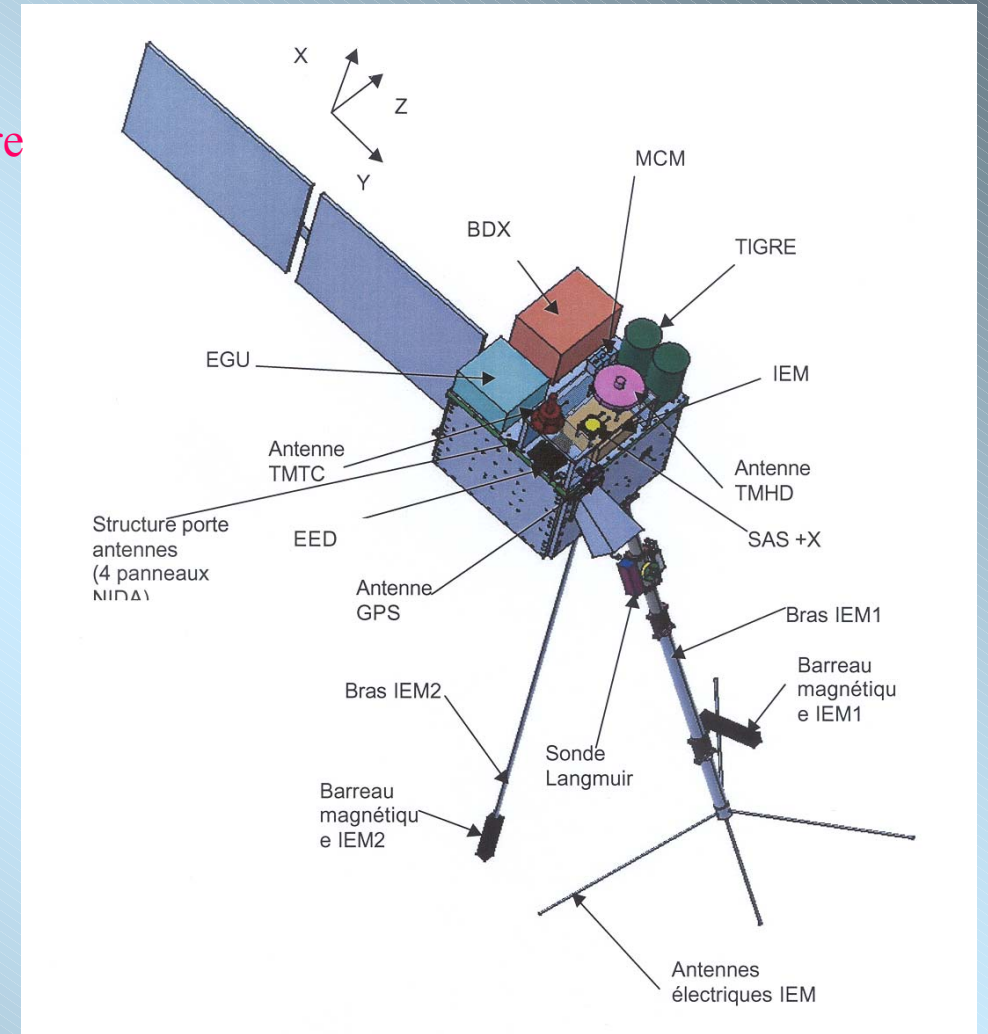
TARANIS

• Study of Atmosphere / Ionosphere / Magnetosphere coupling: sprites, blue jets, elves...

• Payload :
- Microcameras + photometer (CEA, LAM-F)
- Electromagnetic package (LPCE,CETP - F)
- X, γ detector (LANL-USA, CESR-F, DSRI-DK)
- High Energy Electrons (CESR-F)

• If selected in 2006, could fly ~2009

• Strong heritage from DEMETER



Microsats and/or Mission of Opportunities

LYOT

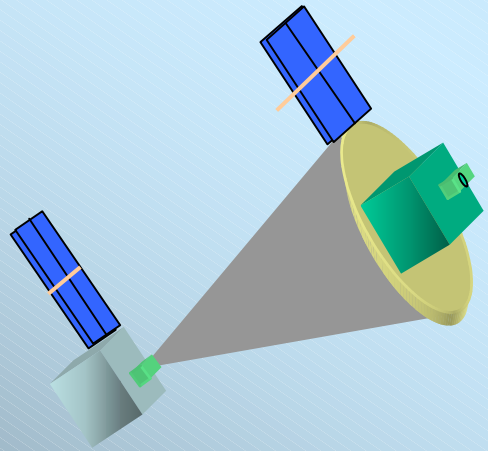
. Solar coronagraphy in H Lα and EUV
. 3 telescopes: disk and external corona
. Possible contribution from Belgium

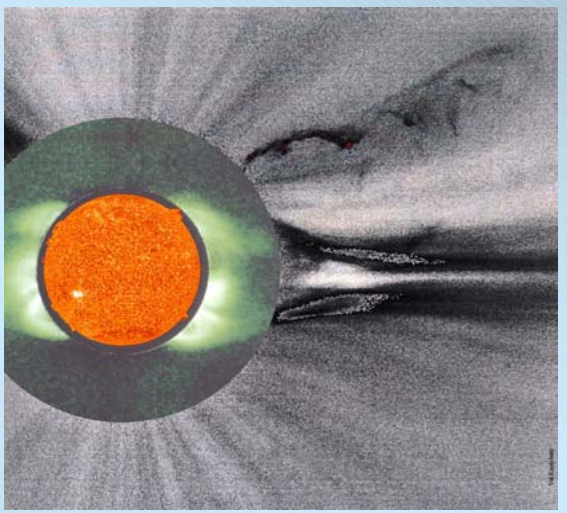
MIRAGES

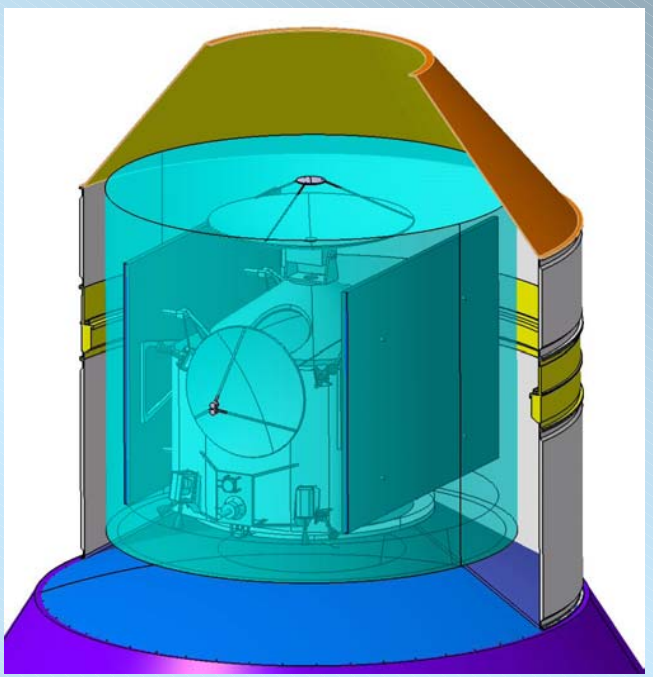
. Study of the High Energy Electrons released by solar flares
. Far Infra Red telescope : 35 and 150 μm
. Combination with a γ detector investigated
. To fly after the next solar maximum (~2012)

Instruments together ~ 1/2 Myriade P/L capacity
Discussions with CSSAR for merging with SMESE underway

ASPICS







Formation Flying Demonstrator

Focused on technology

Imagery of the solar disk and corona <1.01 Rs

Towards an 'ASPICS light' CNES/ESTEC?

Adapted from a CNES study of a TM relay in L1